AIRCRAFT RINSE FACILITY WATER CONTROL SEQUENCE:

AIRCRAFT RINSE FACILITY WATER CONTROL SEQUENCE

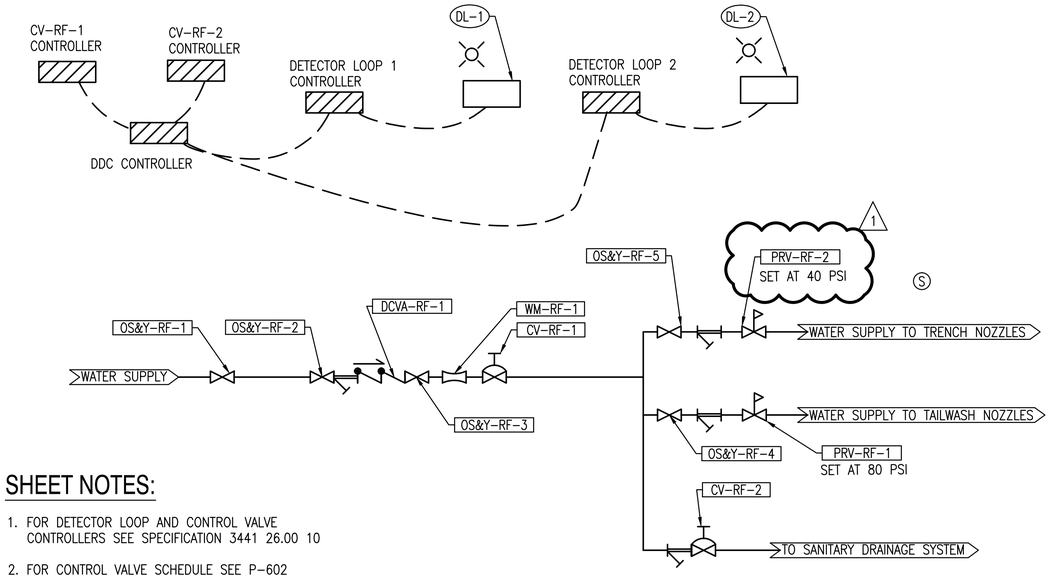
A. AIRCRAFT RINSE WATER SYSTEM: THE SYSTEM IS CONFIGURED TO SPRAY WATER TO BOTH THE BOTTOM AND TOP OF THE AIRCRAFT AS IT MOVES THROUGH THE AIRCRAFT RINSE FACILITY SYSTEM. THE AIRCRAFT BOTTOM PORTION: A PRESSURE REDUCING VALVE (SET TO 30 PSIG) AND 21 FULL CONE NOZZLES SPLIT INTO TWO TROUGHS. THE AIRCRAFT TAIL/TOP PORTION: A PRESSURE REDUCING VALVE (SET TO 80 PSIG) AND 10 NOZZLES SPLIT ONTO TWO STANCHIONS. THE SYSTEM IS DESIGNED TO FLOW WATER AT A RATE OF 1,000 GALLONS PER MINUTE WITH DESIGN RINSE CYCLE TAKING 60 SECONDS TO COMPLETE WHILE THE AIRCRAFT IS TAXIING THROUGH THE AIRCRAFT RINSE FACILITY. THE DETECTION OF AN AIRCRAFT ENTERING THE AIRCRAFT RINSE FACILITY WILL BE SIGNALED TO THE DDC SYSTEM BY AN DETECTION LOOP (DL–1) THROUGH THE ASSOCIATED CONTROLLER. THE DETECTION THAT AN AIRCRAFT HAS COMPLETED THE RINSE CYCLE WILL BE SIGNALED TO THE DDC SYSTEM BY ANOTHER DETECTION LOOP (DL–2) THROUGH THE ASSOCIATED CONTROLLER. DETECTION LOOPS AND ASSOCIATED CONTROLLERS ARE PROVIDED BY THE CIVIL SUBCONTRACTOR. CONTROL VALVES ARE PROVIDED WITH A VALVE CONTROLLER WHICH ALLOWS CONTROL OF FLOW, OPENING RATE, AND CLOSING RATE.

B. RINSE INITIATION CONTROL: THE RINSE IS INITIATED UPON THE DETECTION OF AN AIRCRAFT MOVING THROUGH DL–1. THE INDUCTION LOOP CONTROLLER SIGNALS THE DDC SYSTEM THAT AN AIRCRAFT IS PRESENT. THE DDC SYSTEM ENABLES RINSE MODE.

C. RINSE MODE: ENABLING OF RINSE MODE INITIATES A COUNTDOWN TIMER SET FOR 10 SECONDS (ADJUSTABLE). WHEN THE COUNTDOWN IS COMPLETED THE DDC SYSTEM SIGNALS THE CV–RF–1 VALVE CONTROLLER TO OPEN CV–RF–1. VALVE OPENING SPEED TO BE SET AT 1 SECOND (ADJUSTABLE). RINSE MODE IS DISABLED UPON THE DETECTION OF AN AIRCRAFT MOVING THROUGH DL–2. DISABLING OF RINSE MODE INITIATES A COUNTDOWN TIMER SET FOR 60 SECONDS (ADJUSTABLE). WHEN THE COUNTDOWN IS COMPLETED THE DDC SYSTEM SIGNALS THE CV–RF–1 VALVE CONTROLLER TO CLOSE CV–RF–1. VALVE CLOSING SPEED TO BE SET AT 5 SECONDS (ADJUSTABLE). ONCE THE CVRF–1 VALVE IS CLOSED THE CV–RF–1 VALVE CONTROLLER SIGNALS THE DDC SYSTEM THAT CV–RF–1 IS CLOSED. UPON RECEIVING THE VALVE CLOSURE SIGNAL, THE DDC SYSTEM ENABLES STANDBY MODE.

D. FREEZE PROTECTION MODE: FREEZE PROTECTION SHALL BE ENABLED WHEN THE AMBIENT TEMPERATURE SENSOR INDICATES AN OUTDOOR TEMPERATURE BELOW 35 DEGREES F FOR A PERIOD OF 15 MINUTES. WHEN FREEZE PROTECTION MODE IS ENABLED THE DDC SYSTEM SIGNALS THE CV–RF–2 VALVE CONTROLLER TO OPEN CV–RF–2. VALVE OPENING SPEED TO BE SET AT 1 SECOND (ADJUSTABLE). VALVE CV–RF–2 WILL REMAIN OPEN FOR 5 MINUTES (ADJUSTABLE). AFTER 5 MINUTES THE DDC SYSTEM SIGNALS THE CV–RF–2 VALVE CONTROLLER TO CLOSE CV–RF–2. VALVE CLOSING SPEED TO BE SET AT 2 SECONDS (ADJUSTABLE). FREEZE PROTECTION MODE IS IMMEDIATELY DISABLED AND RINSE MODE ENABLED UPON THE DETECTION OF AN AIRCRAFT MOVING THROUGH DL–1.

E. STANDBY MODE: STANDBY MODE IS ENABLED WHENEVER RINSE MODE AND FREEZE PROTECTION MODES ARE DISABLED. VALVES CV–RF–1 AND CV–RF–2 ARE IN THE CLOSED POSITION. STANDBY MODE IS DISABLED WHEN EITHER RINSE MODE OR FREEZE PROTECTION MODE IS ENABLED.



SHEET NOTES:

1. FOR DETECTOR LOOP AND CONTROL VALVE CONTROLLERS SEE SPECIFICATION 3441 26.00 10
2. FOR CONTROL VALVE SCHEDULE SEE P–602

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AIRCRAFT RINSE FACILITY CONTROL DIAGRAM (A1)

SCALE: NONE

DIRECT DIGITAL CONTROL POINTS SCHEDULE

DESCRIPTION	ACRONYM	AI	DI	AO	DO	ALARM	PRIORITY	NOTES
AIRCRAFT RINSE WATER SYSTEM (CV-RF-1)								
CV–RF–1 CONTROL PANEL	CV–1_OC		X		X		HIGH	
CV–RF–1 STATUS	CV–1_STATUS		X				HIGH	
CV–RF–1 ALARM	CV–1_ALARM		X			X	HIGH	
CV–RF–1 OPEN SETPOINT RESET	CV–1_OPEN RATE_SETPOINT			X				
CV–RF–1 CLOSE SETPOINT RESET	CV–1_CLOSE RATE_SETPOINT			X				
AIRCRAFT RINSE WATER SYSTEM (CV-RF-2)								
CV–RF–2 CONTROL PANEL	CV–2_OC		X		X		HIGH	
CV–RF–2 STATUS	CV–2_STATUS		X				HIGH	
CV–RF–2 ALARM	CV–2_ALARM		X			X	HIGH	
CV–RF–2 OPEN SETPOINT RESET	CV–2_OPEN RATE_SETPOINT			X				
CV–RF–2 CLOSE SETPOINT RESET	CV–2_CLOSE RATE_SETPOINT	X						
RINSE WATER DISCHARGE PUMPS (VTP-1)								
XXP–X STATUS	XXP–X_STATUS		X			X	HIGH	
PUMP HOUSE HEAT (UH-2)								
EUH–2 START/STOP	EUH–2_SS				X			
EUH–2 STATUS	EUH–2_STATUS		X			X	HIGH	
ZONE TEMP (PUMP HOUSE)	PUMP HOUSE_Z_T–1	X				X	HIGH	

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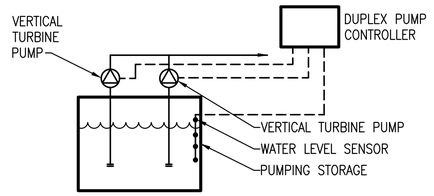
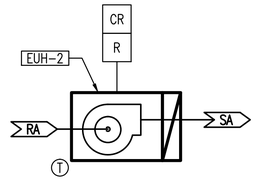


RINSE WATER DISCHARGE PUMPS (VTP-1) CONTROL SEQUENCE:

A. VTP–1/ PUMPING STORAGE CONTROL SEQUENCE: DISCHARGE PUMP/PUMPING STORAGE CONTROL PANEL WILL OPERATE DUPLEX VERTICAL TURBINE PUMP TO MAINTAIN WATER LEVEL IN THE PUMPING STORAGE. PUMPS WILL OPERATE IN LEAD/STANBY ARRANGEMENT. IF THE LEAD PUMP FAILS TO OPERATE, THE CONTROL PANEL WILL ALARM TO THE DDC SYSTEM, START THE STANDBY PUMP AND SHUT OFF THE LEAD PUMP. PUMPS SHALL ALTERNATE BETWEEN LEAD AND STANDBY AFTER EACH PUMPING CYCLE. DDC SYSTEM TO MONITOR GENERAL ALARM FROM PUMP/PUMPING STORAGE CONTROL PANEL. THE CONTROL PANEL WILL ALARM TO THE DDC SYSTEM IF THE WATER LEVEL IN THE PUMPING STORAGE REACHES THE EMERGENCY PUMP LEVEL, START THE STANDBY PUMP AND SHUT OFF THE LEAD PUMP WHEN THE WATER LEVEL REACHES THE PUMP START LEVEL SHUT OFF THE LEAD PUMP. SEE DETAIL B1/P–501 FOR PUMPING LEVELS. FOR PUMP SCHEDULES SEE P–602.

PUMP HOUSE HEAT CONTROL DIAGRAM (B3)

SCALE: NONE



PUMP HOUSE ROOM 101 CONTROL SEQUENCE:

A. GENERAL: AN ELECTRIC UNIT HEATER SERVES THE ROOM. THE DDC OPERATES, SCHEDULES TEMPERATURE SET POINTS AND PROVIDES ALARMS.

HEATING MODE: THE UNIT MAINTAINS A SPACE SET POINT OF 45 DEG F FOR HEATING.

UH-2 (PUMP ROOM, ROOM 101) CONTROL DIAGRAM (A3)

SCALE: NONE

								APPR
							3/27/15	DATE
							AMENDMENT 005	DESCRIPTION
							1	STM

NAVFAC

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APPROVED

FOR COMMANDER NAVFAC

ACTIVITY
NAS WHIDBEY ISLAND

SATISFACTORY TO DATE

DES: BCD	DRW: JML	CHK: LDS

<<PM/DM>> JOSEPH KISIDAY

BRANCH MANAGER

CHIEF ENG/ARCH
<<XXX>>

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND ~ NORTHWEST
NAVAL AIR STATION WHIDBEY ISLAND
AULT FIELD – OAK HARBOR, WA
NAVAL AIR STATION WHIDBEY ISLAND
OAK HARBOR, WA

FY-15 MCON PROJECT P-259 P-8A AIRCRAFT APRON EXPANSION - PART A

AIRCRAFT RINSE FACILITY CONTROLS

SCALE: AS NOTED
EPROJECT NO.:
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SHEET 234 OF 302

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